

## WHAT IS CLAIMED IS:

1. A light source for generating and coupling light of a first wavelength into an optical waveguide, said light source comprising:

5

a first optical cavity comprising a bottom mirror located outside of said optical waveguide, and a top mirror comprising a reflector located within said optical waveguide; and

10

an active region between said top and bottom mirrors for generating light of said first wavelength.

2. The light source of Claim 1 further comprising a polarization filter between said top and bottom mirrors.

3. The light source of Claim 1 wherein said optical waveguide is an optical fiber.

4. The light source of Claim 3 wherein said reflector is a Bragg reflector.

5. The light source of Claim 4 wherein said Bragg reflector further comprises a mechanism for altering the wavelength of the light reflected thereby.

6. The light source of Claim 5 wherein said mechanism also alters the distance between said top and bottom mirrors.

25

7. The light source of Claim 3 wherein said active region generates light by absorbing light of a second wavelength.

8. The light source of Claim 7 further comprising a pumping laser for generating light of said second wavelength.

30

9. The light source of Claim 7 wherein said bottom mirror is transparent to light of said second wavelength.

10. The light source of Claim 8 wherein said pumping laser includes a second optical cavity comprising a top mirror, active region, and bottom mirror, wherein said top mirror of said pumping laser is electrically connected to said bottom mirror of said first optical cavity, and wherein said active region of said pumping laser generates light in response to an electrical current passing therethrough.

11. The light source of Claim 10 wherein said top mirror of said pumping laser is located on an end of said optical fiber.

10081071-022002